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| 09/755,405 | 01/05/2001 | Brian Gerard Goodman | TUC920000051US1 | 5242 |

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EXAMINER

ZHEN, LI B

ART UNIT PAPER NUMBER

2194

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 09/755,405 | Applicant(s) GOODMAN ET AL. | |
| | Examiner Li B. Zhen | Art Unit 2194 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005 and 20 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.


WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 42 are pending in the current application.

Response to Arguments

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 – 7, 11 – 13, 15 – 21, 25 – 27, 29 – 35 and 39 – 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,223,217 to Pettus [cited in the previous office action] in view of U.S. Patent No. 6,012,084 to Fielding et al. [hereinafter referred to as Fielding].**

5. As to claim 1, Pettus teaches the invention substantially as claimed including allowing communication among processing nodes in a system [col. 5, lines 23 – 35], comprising:

receiving, in a source node [client node 610, Fig. 6; col. 9, line 57 – col. 10, line 16], a request from a source object executing in the source node ["caller" object which, once instantiated, accepts service requests from client objects; col. 5, lines 23 – 36 and

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col. 18, lines 4 – 28] to send a message to a destination object executing in a destination node [server node 650, col. 9, line 57 – col. 10, line 16], wherein each node includes a processor capable of multitasking multiple program objects [CPU 402 and 502, Figs. 4 and 5; col. 6, line 52 – col. 7, line 15] and a communication interface to transmit and receive data with the other nodes [network adapter 645 and 685, Fig. 6; col. 10, lines 16 – 33];

determining, in the source node, whether the destination node and source node are a same node [if the requests can be serviced locally or remotely; col. 5, lines 23 – 36 and col. 18, lines 50 – 63];

transmitting the message to the destination object within the source node if the destination node is the source node [If the requests can be serviced locally, then the caller object routes the request to a local service object; col. 5, lines 23 – 36]; and

if the destination node is not the source node [if the request is for a service which must be provided by a service object located on a remote server node, then the caller object provides high-level, "client-server communication" protocol requests to the remote node; col. 5, lines 30 – 36], performing:

(i) transmitting, with the source node, the message to the destination node through the communication interface [RPC objects also include a "dispatcher" object which is located at the remote service node and receives the incoming service requests; col. 5, lines 36 – 49 and col. 10, lines 16 – 25]; and

(ii) transmit the message to the destination object within the destination node [the dispatcher object 670 directs the request to an application program 652 for execution of the service; col. 10, lines 26 – 33].

Although Pettus teaches the invention substantially, Pettus does not specifically teach invoking an operating system command in the source node to transmit the message to the destination object within the source node if the destination node is the source node and invoking an operating system command in the destination node to transmit the message to the destination object within the destination node.

6. However, Fielding teaches invoking an operating system command in the source node to transmit the message to the destination object within the source node if the destination node is the source node [lcmal library 10 provides access to Communication functionality available to client tasks of the invention....Message Routing 9, provided by the lcmnc task 5, is responsible for routing all support and application task messages within nodes from one task to another; col. 11, lines 15 – 33] and invoking an operating system command in the destination node to transmit the message to the destination object within the destination node [component also adds the ability to automatically pack a message structure in a platform independent manner (managing the necessary memory allocation/deallocation) and send it in a message or use it in an RPC call; col. 23, line 62 - col. 24, line 5].

7. It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the teaching of invoking an operating system command in the source node to transmit the message to the destination object within the source node if

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the destination node is the source node and invoking an operating system command in the destination node to transmit the message to the destination object within the destination node as taught by Fielding to the invention of Pettus because this isolate changes in the internode communications channels from those for intra node communications and routing and separating internode communications functions into separate tasks allows additional internode communications functionality to be added more readily [col. 13, lines 13 - 22 of Fielding].

8. As to claim 2, Pettus as modified teaches invoking, in the source node, an operating system command to transmit the message to the destination object [application program 612 communicates with the operating system 620 at a higher level when requesting an RPC service; col. 10, lines 1 – 16 of Pettus], and associating a message queue with each object in each node [col. 14, lines 3 – 16 of Fielding], and wherein the invoked operating system command in the source node transmits the message to the message queue associated with the destination object [col. 23, line 62 - col. 24, line 5 of Fielding].

9. As to claim 3, Pettus teaches determining, in the source node, an address of the destination node that addresses the destination node when transmitting messages through the communication interface [network address; col. 10, lines 53 – 67];

generating, in the source node, at least one message packet [request data packet; col. 17, line 63 – col. 18, lines 5] including the message, the determined

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address, and an address of the destination object [function pointer; col. 13, lines 39 – 60]; and

transmitting, with the source node, the at least one message packet to the destination node over the communication interface [service request packet may be forwarded from the caller object; col. 17, line 64 – col. 18, line 5].

10. As to claim 4, Pettus as modified teaches the communication interface comprises a bus and wherein including the address of the destination node in the message causes the destination node to read the at least one message packet transmitted on the bus [col. 11, lines 52 – 60 of Fielding].

11. As to claim 5, Pettus as modified teaches determining, in the destination node, the destination object for the at least one message packet [child ID field which, in turn, indicates that the request is to be forwarded on to another dispatcher object; col. 17, line 64 – col. 18, line 5 of Pettus];

extracting, in the destination node, the message from the message packet [networking interface 680 reformats the request and forwards it to a dispatcher object 670; col. 10, lines 26 – 33 of Pettus], wherein the invoked operating system command in the destination node transmits the message to the message queue associated with the destination object [col. 23, line 62 - col. 24, line 5 of Fielding].

12. As to claim 6, Pettus as modified teaches invoking an operating system command [col. 10, lines 1 – 16 of Pettus], with the source object, to send the message

to a message queue associated with a source network object in the source node [col. 11, lines 52 – 60 of Fielding];

determining, with the source network object, an address of the destination node that addresses the destination node when transmitting messages through the communication interface [network address; col. 10, lines 53 – 67 of Pettus];

generating, with the source network object, at least one message packet [request data packet; col. 17, line 63 – col. 18, lines 5 of Pettus] including the message, the determined address of the destination node, and an address of the destination object [function pointer; col. 13, lines 39 – 60 of Pettus];

transmitting, with the source network object, the at least one message packet to the destination node over the communication interface [service request packet may be forwarded from the caller object; col. 17, line 64 – col. 18, line 5 of Pettus]; and

receiving, with a destination network object, the at least one message packet [col. 17, line 64 – col. 18, line 5 of Pettus], wherein the destination network object invokes the operating system command in the destination node to transmit the message to a message queue associated with the destination object in the destination node [col. 23, line 62 - col. 24, line 5 of Fielding].

13. As to claim 7, this is rejected for the same reasons as claim 5 above.

14. As to claim 11, Pettus as modified teaches each object is assigned a unique object identifier in the system, and wherein the unique identifier is used within all nodes

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to identify the destination object to receive the message [an identifier for an application; col. 19, lines 38 – 52 of Fielding].

15. As to claim 12, Pettus teaches each node is assigned a unique node identifier [locates the network address that corresponds to the desired network resource; col. 10, lines 54 – 67] used within all nodes to identify the destination node to receive the message.

16. As to claim 13, Pettus teaches a function call ["caller" object which, once instantiated, accepts service requests from client objects; col. 5, lines 23 – 36 and col. 18, lines 4 – 28] receives the request from the source object to send the message to the destination object [server node 650, col. 9, line 57 – col. 10, line 16], determines whether the destination node is the same node [if the requests can be serviced locally or remotely; col. 5, lines 23 – 36 and col. 18, lines 50 – 63], sends the message to the destination object [If the requests can be serviced locally, then the caller object routes the request to a local service object; col. 5, lines 23 – 36] or causes the transmittal of the message to the destination node over the communication interface, and maintains the object and node identifier assignment [col. 10, lines 54 – 67], further comprising:

updating the node and object identifier used by each function call in each node to reflect a modification to the arrangement of nodes or objects in the system [col. 12, lines 28 – 40].

17. As to claims 15 – 21 and 25 – 27, these are system claims that correspond to method claims 1 – 7 and 11 – 13; note the rejections to claims 1 – 7 and 11 – 13 above, which also meet these system claims.

18. As to claims 29 – 35 and 39 – 41, these are rejected for the same reasons as claims 1 – 7 and 11 – 13 above.

19. **Claims 8 – 10, 14, 22 – 24, 28, 36 – 38 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettus and Fielding further in view of U.S. Patent No. 6,349,352 to Lea [cited in the previous office action].**

20. As to claim 8, Pettus as modified does not specifically teach a component node that controls an electro-mechanical component of the system and manages system commands and the message includes a command to instruct a motion object in the component node to control the electromechanical component to perform an operation.

However, Lea teaches a first node comprises a controller node [Intermediate AV nodes; col. 8, lines 17 – 32 of Lea] and at least one second node [Full AV nodes; col. 8, lines 6 – 17 of Lea] comprises a component node that controls an electro-mechanical component [electronic device; col. 11, lines 23 – 57 of Lea] of the system, wherein the source object comprises a work management object [Device manager 761; col. 15, lines 41 – 45 of Lea] in the controller node that manages system commands [Device manager 761 is responsible for creating and managing the DCMs that represent devices managed by an FAV device; col. 15, lines 40 – 45 of Lea] and the message includes a command [col. 16, lines 17 – 21 of Lea] to instruct a motion object [Device

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Modules 720; col. 15, lines 44 – 50 of Lea] in the component node to control the electromechanical component to perform an operation [each DCM functions as a control point for a device; col. 15, lines 44 – 50 of Lea].

21. It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the teaching of a component node that controls an electro-mechanical component of the system and manages system commands and the message includes a command to instruct a motion object in the component node to control the electromechanical component to perform an operation as taught by Lea to the invention of Pettus as modified because this allows new devices to be integrated into an existing network and provide their services in a seamless manner [col. 5, lines 50 – 55 of Lea].

22. As to claim 9, Pettus as modified teaches a communication node [Full AV nodes; col. 8, lines 6 – 17 of Lea] is capable of receiving commands from a host system to control the electromechanical component [electronic device; col. 11, lines 23 – 57 of Lea] of the system, further comprising:

receiving, with a host communication object executing in the communication node, a command from a host system to instruct the motion object to control the electromechanical component of the system [col. 19, lines 39 – 60 of Lea];

generating, with the host communication object, a message including the command to send to the work management object [col. 19, line 60 – col. 20, line 11 of Lea]; and

transmitting, with communication node, the message to the controller node to route to the work management object [col. 23, lines 36 – 49 of Lea].

23. As to claim 10, Pettus as modified teaches the system comprises a storage library system, and the electromechanical component comprises a component of a storage library system [col. 16, lines 20 – 25 of Lea].

24. As to claim 14, Pettus as modified teaches each node transmits signals to determine an availability of other nodes on the communication interface [col. 27, lines 16 – 24 of Lea].

25. As to claims 22 – 24 and 28, these are system claims that correspond to method claims 8 – 10 and 14; note the rejections to claims 8 – 10 and 14 above, which also meet these system claims.

26. As to claims 36 – 38 and 42, these are rejected for the same reasons as claims 8 – 10 and 14 above.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,850,962 to Povolny et al. teaches a system for transferring files between a source location and a target location.

CONTACT INFORMATION


28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on 571-272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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